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Anglo–Dutch financial connections and contrasts in the late eighteenth century: The Amsterdam phase of the 1772–3 credit crisis

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Abstract

We examine the Amsterdam phase of the 1772–3 financial crisis using the British experience in the same episode as comparative context. We conclude that, notwithstanding some direct exposures by Amsterdam institutions to the principals of the London crisis, the main linkage between the two outbreaks was the requirement for cash margin on loans backed by British East India Company shares. No significant contagion via the bills of exchange network spread from London to Amsterdam in the period separating the two outbreaks, but some feeding back of distress to London is noticeable after the Dutch outbreak. The crisis was rooted in credit expansion, a deterioration in asset risk profiles, and speculation in West Indian mortgage securities and British equity markets. Speculators were enabled by information inefficiencies in the specialized and layered Amsterdam markets, and by the absence of a gatekeeper who could have regulated the provision of credit to them. To contain the outbreak, the Dutch drew on the cohesion of an informal club of insiders who led business and civic affairs. Though the credit markets resumed normal operations relatively quickly, the incurred losses were transformative for their long term prospects by devastating some of their most important firms.

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At its peak during the Seven Years War (1756–63), Amsterdam was the cardinal node of an international credit network that directed financial capital to growing economies, such as Great Britain's, and to capital-hungry sectors such as the American plantations. The Bank of Amsterdam (*Amsterdamsche Wisselbank*, henceforth AWB) provided a proven platform for the clearing of payments and the secure deposit of privately held specie.[1] Prevailing interest rates remained among the lowest in Europe,[2] reflecting the city's safe-haven status and the reserve currency function of the AWB unit of account.[3] Helped by a long peace between their respective countries (1674–1780), Amsterdam and London developed a symbiotic relationship in their securities markets, above all those for the British 'funds',[4] with cross-border holdings and auction markets for over-the-counter securities contributing to considerable market efficiencies.[5] Money and currency markets were connected via the international bills of exchange network, in which Amsterdam benefitted from its role in the precious metals trade and the established credit networks of its merchant houses such as Hope & Co., Clifford & Sons, and Andries Pels (henceforth Hope, Clifford, and Pels, respectively).

This deepening of Amsterdam's international financial role occurred in a period when the Dutch Republic's market share and profitability in merchandise trade was in long-term decline, and reflected the rise in the economic and social primacy of the rentier class.[6] Combined with Britain's burgeoning political and economic power, this underlying economic trend might have well led to London eventually supplanting Amsterdam as Europe's main financial entrepot, but developments were accelerated by a series of financial crises (1763, 1772–3, 1780–3) that ushered in a transformative period which only ended with the conclusion of the Napoleonic Wars. London emerged from this crucible as the world's undisputed financial capital, with the Bank of England's (BOE) institutional arrangements as the template that would be gradually adopted across the world.[7] Amsterdam instead receded to a regional financial centre of a stature commensurate to the diminishing horizons of a secondary, albeit still imperial, power. The already moribund AWB was liquidated around the same time.[8] Much of this transformation can be attributed to the cataclysmic political events that saw the Dutch Republic itself vanish. The

[1] Quinn and Roberds, 'Policy framework'.

[2] Flandreau et al., 'Bell jar', p. 190.

[3] We adopt the convention proposed in Quinn and Roberds, *History of the Bank of Amsterdam*, p. 25, of assigning the English terms 'florin' specifically to the AWB 'bank' ledger currency and '(current) guilder' to the wider Dutch unit of account.

[4] These comprised the stock of the chartered companies (British East India Company, Bank of England, and South Sea Company) and the public debt.

[5] The literature is large. Some of the more notable recent treatments are: Neal, 'Efficient markets'; idem, 'Integration and efficiency'; Carlos and Neal, 'Amsterdam and London as financial centres'; Petram and Richards, *First stock exchange*; Koudijs, 'Those who know most'.

[6] Israel, *Dutch Republic*, pp. 998–1008, 1016.

[7] Fractional reserve banking, a paper money issue to supplement a formal metallic standard, and an increasingly activist supervisory and crisis containment brief.

[8] Quinn and Roberds, 'Death of a reserve currency'.

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mid-eighteenth-century financial crises were nonetheless pivotal in weakening Amsterdam's hitherto exemplary financial arrangements,[9] whilst at the same time forming a watershed in British financial history through their nature as the first crises of private credit that witnessed the gradual assumption by the BOE of some functions of a lender of last resort (LOLR).[10]

Of the three episodes, 1772–3 is potentially the most instructive. It was a dual crisis with successive outbreaks in London and Amsterdam, separated by half a year (June and December 1772, respectively). Existing accounts have identified speculation in the shares of the British East India Company (EIC) by Dutch syndicates as a connecting thread between the two crisis phases,[11] albeit with some doubt as to the extent of such links.[12] Perhaps because of this uncertainty, specialist work on the crisis tends to treat the two phases in self-contained discussions.[13] There is still value in having at least a comparative approach to the study of each phase. For one, the presence of direct linkages between the two outbreaks can point to international contagion at work, whilst the anecdotal contemporary reports of coordinated containment action may similarly underline the emergence of an international LOLR.[14] Furthermore, as the crisis occurred with the major European powers at peace, the single greatest influence on finance in this period is automatically eliminated.[15] Even if causal links between the two outbreaks cannot be safely established, the episode can therefore still supply a natural experiment in the architecture of the eighteenth-century financial system by highlighting the contrasting strengths and weaknesses of two connected but different institutional architectures under stress. London was dominated by the BOE, both in terms of size and in the lucrative privileges it enjoyed through its charter. In turn, the BOE was gradually (if unofficially) developing a gatekeeping and crisis containment brief through the operation of its discount window. Amsterdam, on the contrary, had developed a layered multipolar structure consisting of numerous firms of different sizes and specializations, in which even the largest (Hope) did not dominate the system to the same degree.

This article re-examines the Amsterdam phase of the 1772–3 crisis using the British experience in the same episode as comparative context. There are four lines of inquiry: (a) the immediate triggers of the December 1772 outbreak, with a particular focus on possible contagion links with the earlier London events (section I); (b) the wider causes of the crisis, especially underlying weaknesses that allowed these triggers to lead to general financial distress (section II); (c) the apparent indulgence of speculators by Dutch creditors compared with the gatekeeping role exercised by the BOE in London (section III); and (d) the tools by which the crisis was contained and the wider implications for the long-term viability of the Amsterdam institutional arrangements compared with those present in London (section IV).

To these ends, the paper utilizes a variety of sources: (a) a sample of bill of exchange protests registered with Dutch notaries in the immediate crisis period (Q1 1772–Q3 1773),[16] changes in the

[9] Braudel, *Civilisation and capitalism*, pp. 266–73.

[10] Hoppit, 'Financial crises'.

[11] Wilson, *Anglo-Dutch commerce*, pp. 169–72; Sutherland, *East India Company*, pp. 101–3, 141–3; Bowen, 'Lord Clive and speculation'; Neal, *Rise of financial capitalism*, pp. 170–1; Kindleberger, *Manias*, p. 49.

[12] Koudijs and Voth, 'Leverage and beliefs', p. 3373n.

[13] Sheridan, '1772 and the American colonies'; Goodspeed, *Legislating instability*; Kosmetatos, 'Ayr Bank'; idem, *1772–3 credit crisis*.

[14] Smith, *Wealth of nations*, p. 320; Kindleberger, *Manias*, p. 162.

[15] This is true only for the north-western European countries which are the focus of this paper. Notably, there was an ongoing war between Russian and the Ottoman Empire (1768–74)

[16] See app. A for methodology.

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number, amounts, and geographical distribution of these protests serve as indicators of credit distress around the crisis outbreak, and information on refused bills that were nevertheless paid by third parties 'under protest' also provides a measure of risk appetite during the boom phase that preceded the market breakdown; (b) data on Dutch short-term margin loans backed by tradeable British securities (*obligaties*) for the period 1766–73 demonstrate the triggers that caused the crisis itself, and allow for the analysis of speculating syndicates and their creditors; and (c) half-yearly balance data for the nearly 2500 clients of the AWB, and the AWB's coin room transactions for the period 1772–4, help segment the various participants of the Amsterdam financial markets, and highlight specie flows and changing bill volume and account velocity in relation to capacity in the bills market.[17]

We conclude that, notwithstanding some direct credit exposures by Amsterdam institutions to the principals of the London crisis, the most important linkage between the two outbreaks was the sudden requirement for cash margin on EIC-linked *obligaties* when the stock price fell through stipulated barriers. A degree of contagion later fed back to London via defaulting chains of accommodation bills between some Anglo–Dutch firms in London and speculating syndicates in the Netherlands. The impact on the wider bills market during the 6-month interval separating the two outbreaks appears to have been otherwise limited. This makes extensive cross-border contagion through this route unlikely. Instead, we propose that the Amsterdam outbreak was enabled by a deterioration in asset risk profiles over the previous decade. Accumulated losses in West Indian mortgage-backed securities (*negotiaties*) in particular may have incentivized speculators to persist in their *obligaties*-funded long EIC stock positions as a form of 'gambling for resurrection'. Speculation was in turn enabled by information inefficiencies in the highly specialized and layered Amsterdam money markets, and exacerbated by the absence of a gatekeeper who could have regulated the provision of credit to speculators with a poor record. We finally find that, like London, Amsterdam contained the crisis by leveraging its institutional strengths. Unlike the British who leant on the BOE's discount window and paper money issue, the Dutch instead drew on the cohesion of an insider 'club' of firms and individuals who led business and civic affairs. The large losses absorbed by this club were transformative for Amsterdam by devastating some of its biggest firms, as well as many smaller Jewish houses that had hitherto been a major force in credit markets.

I | Financial contagion between London and Amsterdam in 1772–3

The crisis spanned the period of summer 1772 to spring 1773, and comprised two sequential peaks:[18]

(1) An initial outbreak in London in June 1772, sparked by the failure of banker and speculator Alexander Fordyce, and especially involving Scottish finance. Despite anecdotal reports of excessive and poor-quality lending leading up to the outbreak,[19] this was above all a *liability-side crisis* arising from an overdependence of bank funding on the bills of exchange market, which proceeded through bank runs and a credit crunch. Despite its severity, the outbreak

[17] See app. B for methodology.

[18] See app. C for a detailed timeline of significant events.

[19] Kindleberger, *Manias*, p. 49.

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was quickly contained through a BOE operation that supported 10 London bankers perceived as systemically important for the bills market.[20]

(2) A flare-up in Amsterdam around Christmas 1772 centred around the failure of the Hermanus and Johannes van Seppenwolde brothers who led a speculating syndicate (henceforth Seppenwolde syndicate) involving Clifford and the prominent West Indies trading firm of Abraham ter Borch and Sons (henceforth ter Borch). Although this outbreak was initiated by a funding crisis precipitated by cash margin demands on *obligaties* secured on EIC stock, this was in its core an *asset-side crisis* enabled by deteriorating asset risk profiles over the previous decade. This phase was also violent but brief in duration, with most market functions restored by spring 1773.

The level of integration of Anglo–Dutch finance, the absence of a common systematic shock initiating the crisis in both financial centres, and the close time proximity between two sequential outbreaks raise the possibility of financial contagion proceeding from London to trigger the Amsterdam events. Contagion is a notoriously hard concept to define, as any definition must not only require causal relationships between sequential events, but also specify a scope and time scale that makes contagious propagation distinct from other crisis effects. For the purposes of this discussion we define contagion as an idiosyncratic transmission mechanism in which a narrow external impact in one market (or market sector) proceeds to infect other parts of the financial system insulated from the original shock. To this definition we add the necessity for fast transmission, and in turn we define 'fast' by considering mechanisms to be potentially contagious only if their time scales are short enough as to endanger irreversible liability strains (such as bankruptcy or bank runs), or forced and correlated asset liquidations ('fire sales'), before self-correcting market mechanisms can take effect.[21] Several processes fall under this definition, broadly grouped into: (a) mechanical ('domino') effects such as credit default cascades, fire sales, or the reallocation of capital to account for losses elsewhere, and (b) 'informational' effects involving an increase in risk aversion, including credit crunches and flights to quality/liquidity.[22]

In the case of the British outbreak of 1772 the most important vector of contagion has been identified to be bills of exchange.[23] Originally created to span the time lags and geographical distances involved in foreign trade, by this time bills had added a purely financial function as unsecured instruments of short-term credit.[24] Despite much hand-wringing by contemporaries about the proliferation of such 'fictitious' bills, drawn and redrawn ('swivelled') without any underlying commercial transactions,[25] the bills network formed the basis of domestic and international money markets. Specialist firms (eventually known as 'acceptance houses') earned interest income by interposing their credit between bills counterparties, in effect renting out their

[20] Kosmetatos, 'Last resort lending'.

[21] This definition is after De Bandt and Hartmann, 'Systemic risk', with support from Forbes, 'No contagion, only interdependence', and idem, 'Identifying contagion'. The emphasis on speed of transmission is from Kosmetatos, 'Last resort lending'.

[22] For a review, see Moser, 'What is international financial contagion?'. For theory on bank runs with uninsured deposits (as was the case in the eighteenth century), see Diamond and Dybvig, 'Bank runs', and Goldstein and Pauzner, 'Demand-deposit contracts'; for fire sales, see Brunnermeier and Pedersen, 'Market liquidity'.

[23] Kosmetatos, *1772–3 credit crisis*, pp. 206–23.

[24] Santarosa, 'Financing long-distance trade'; Neal, *Rise of financial capitalism*, pp. 5–9.

[25] Smith, *Wealth of nations*, pp. 308–11. SM XXV (1763), p. 567; Anonymous, *Inquiry into the Late Mercantile Distresses*, pp. 6–8; *London Chronicle*, 30 June–2 July 1772.

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established credit connections. In 1772, bills served as vectors of contagion within Britain from both an asset and a liability perspective. In the former case, banks found themselves owning large holdings of third-party bills that either fell in value or were altogether dishonoured. In the latter case, the outright failure or increased risk aversion of bills acceptors meant that otherwise solvent debtors became unable to refinance their assets.[26]

As British bankruptcy law allowed a creditor owed at least £100 to initiate a bankruptcy commission and post the debtor's name in the *London Gazette* (with potentially irretrievable consequences for the debtor's credit),[27] the prospect of large numbers of maturing bills being dishonoured simultaneously was a clearly defined danger for the credit markets with a horizon of 3 months – the typical maximum maturity of circulating bills. It is for this reason that the uncharacteristically large and rapid intervention by the BOE in late June 1772 to support bills acceptors has been identified as evidence of a developing though still unofficial LOLR brief: the timing of the extraordinary intervention was comparable to the tenor of the most critical vector of contagion.

Considering the extent of Anglo–Dutch financial connections and the fact that the Dutch were net overall creditors to the system, we would expect some contagion via the international bill market once the crisis broke out in London. This could appear through: (a) an increase in defaulted bills and/or (b) a rise in the proportion of new London-originating bills 'protested' (i.e. refused) by Amsterdam acceptors – in other words, a credit crunch. The former could become evident in the records of the London Court of Equity and in the *London Gazette*, whilst the latter would leave a trail in the notarial protest records in Amsterdam. Some connections can indeed be demonstrated, but the degree to which these were contagious is much more debatable. The most striking case is the exposure by the leading Dutch firm, Hope, to Alexander Fordyce, the very 'spark who set off the mine' of the London outbreak,[28] against whom they took a charge of 537 686 guilders on their 1773 profits.[29] Hope nevertheless still showed an overall profit of 731 916 guilders in 1773, an increase of almost 40 per cent from the previous year,[30] and as will be discussed in section IV, the firm felt secure enough to actually *increase* its operations after the Amsterdam outbreak so as to support the wider market in its distress.

When it comes to the broader bills market, our sample shows a doubling in the value of London-originating bills protested with Amsterdam notaries in the second half of 1772 (table 1). As a fraction of the whole sample, however, London protests remained comparatively minor during the period separating the two outbreaks, peaking at a little over 10 per cent. It is only after the failure of Clifford at the end of the year that London protests become significant, rising seven-fold by value and reaching to about a third of all Amsterdam protests in Q1 1773. This general impression of contagion occurring too late (i.e. after the Amsterdam outbreak), and running in the opposite direction to that expected (i.e. from Amsterdam to London), is underlined by surviving records of a chain of defaults in the accommodation bills market: the failure in March

[26] The emblematic British case in 1772 was the Ayr Bank in Scotland, which was exposed to both these avenues of contagion (Kosmetatos, 'Ayr Bank').

[27] Hoppit, *Risk and failure*, pp. 35–7.

[28] Forbes, *Memoirs*, pp. 39–44, SM XXXIV (1772), p. 311.

[29] SA-H 753/592, fo. 24. The relationship went back to 1770 and involved accommodation bills with Hope and the London firm of Gurnall, Hoare, and Harman. Hope also acted as agent for Fordyce's trading of EIC and BOE stock in Holland via a margining agreement (SA-H 735/1.2.3.5 1510). Hope entered a long litigation in London over being admitted to Fordyce's bankruptcy commission (TNA B1/65, fos. 54–5, 10, 242–6).

[30] SA-H 753/592, fo. 23.

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TABLE 1 Bills of exchange protested with Amsterdam notaries, Q1 1772 to end of Q3 1773

Drawer origin	1Q 1772	2Q 1772	3Q 1772	4Q 1772	1Q 1773	2Q 1773	Totals
Baltic & Germany	83 807	315 770	968 803	755 426	1 745 590	537 320	4 406 717
Share in each quarter	8%	22%	42%	45%	42%	33%	
Britain	59 996	76 433	139 716	178 822	1 345 057	–	1 800 023
Share in each quarter	5%	5%	6%	11%	32%	–	
West Indies	821 490	693 384	680 398	490 162	463 957	433 305	3 582 697
Share in each quarter	75%	48%	29%	29%	11%	26%	
Rest of Europe	134 100	177 823	229 006	156 473	607 283	670 952	1 975 637
Rest of world	–	188 291	303 170	112 440	–	–	603 900
Totals	1 099 394	1 451 700	2 321 093	1 693 324	4 161 887	1 641 577	
Change per quarter		32%	60%	−27%	146%	−61%	
Number of observations	94	138	129	158	78	40	

Amounts in current guilders.

Source: SA-N, various notaries (see app. A for sampling methodology). German Switzerland included in 'Baltic & Germany'.

1773 of the Anglo–Dutch house of John Daniel & Maurice Dreyer (henceforth Dreyers) and of their associate John Craven who had run a very large bills position (exceeding £265 000) with ter Borch in Amsterdam.[31] The geographical distribution of our protest sample more generally shows that prior to the Amsterdam outbreak strains in the Dutch bills market were more notable for the German–Baltic region and the West Indies. The former may have been linked to constitutional crises in Sweden and Denmark and independent of the London events. The West Indies problems had deeper roots that went back to the contraction of the *negotiatie* market and a resulting rise in bill protests after 1770,[32] to which we will return in the following section. As some Dutch planters purchased supplies from Ireland and the British North American colonies,[33] they became connected to the British bills system and thus may have become strained by the London credit crunch in the same way as British colonial tobacco traders.[34] Such strains do not appear to be significant on aggregate, however, since the share of West-Indies-related Amsterdam protests in our sample actually fell over the course of 1772, though still remaining well above London-related protests. This is probably due to the fact that Dutch planters tended to use bills as payment rather than credit instruments, and hence the London credit crunch could only have a limited impact on them.[35]

Anglo–Dutch bill transactors in Europe were also less exposed to the unsecured bills of the sort that got in trouble in Britain. As purely financial (i.e. unconnected to merchandise transactions) bills were generally of very short duration to keep credit risk manageable, the physical delay of shipping them to and from the Netherlands made frequent and rapid transactions such as swivelling less attractive. Furthermore, the marketability of British financial bills depended on having a co-signatory with access to the BOE's discount window, encouraging a centralizing

[31] Kosmetatos, *1772–3 credit crisis*, pp. 216–18.

[32] De Jong et al., 'Plantation mortgage-backed securities', pp. 892–4.

[33] Power, 'Irish planters', pp. 88–9.

[34] Kosmetatos, '1772/3 in the Atlantic World'.

[35] De Jong et al., 'Plantation mortgage-backed securities', p. 883.

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TABLE 2 *Obligatie* lender demographics, by self-identification

	1766–9		1770–3	
	Total volume	**Market share**	**Total volume**	**Market share**
Business people	2 685 894	23%	2 607 400	23%
Widows/unmarried women	2 263 500	19%	1 930 900	17%
Male rentiers	1 875 500	16%	879 900	8%
Civic & military officials	593 000	5%	531 550	5%
Executors of wills	236 000	2%	188 000	2%
Clergy	156 000	1%	151 000	1%
Unreported/ambiguous	4 066 400	34%	5 029 387	44%
Total	11 876 294		11 318 137	

Amounts in current guilders.
Source: SA-N, Daniel van den Brink notary, 1766–73.
Number of observations: 795.

trend for liquidity to London rather than to Amsterdam.[36] With the exception of the latecomer Dreyers, who became involved in the accommodation bills market via the Seppenwolde syndicate, established Anglo–Dutch firms such as Muilman or Vanneck instead acted as conduits for Dutch investors in the British funds. Purchases were collateralized by the underlying securities and managed by agents in the Netherlands requiring formal legal authorization (*procuratie*) to act on behalf of the investor. This collateral shielded related bills during the crisis, resulting in fewer protests. For instance, in the period 1764–72, the Vannecks took on 358 *procuraties* to manage English securities investments for 102 Dutch clients, but registered no protests.[37]

By contrast to the bills market, the fall in British EIC stock in the second half of 1772 supplies a contagion link between the two crisis outbreaks that can be established with better confidence. The Dutch had invested in the EIC throughout the 1760s, especially during the battles for control that helped inflate a bubble in 1766–9.[38] Clifford and Hope were among at least 20 Amsterdam firms who financed speculators during this struggle, with Clifford persisting even after 1769 as part of the Seppenwolde syndicate.[39] Some Dutch speculators bought EIC shares on margin via loan agreements (*obligaties*) with a typical maturity of 6–12 months and callable with 6 weeks' notice. *Obligaties* stipulated the posting of cash collateral (typically 10 per cent of the loan) should the stock price fall below pre-determined floors.[40] This typical tenor meant that, margin requirements aside, *obligaties* struck just before the London outbreak were coming due to be rolled over just around the time of the Amsterdam one.

Much of the *obligatie* loan capital originated with Dutch rentiers, with widows and unmarried women especially prominent (table 2). By the very construction of the margin loans, which needed an asset as collateral, speculators held a natural long position. The overall volume of the *obligaties* market stayed on broadly the same levels in the 3 years following the implosion of the EIC bubble (1770–3) as it had been during its peak (1766–9), but there was a notable shift in market

[36] Pressnell, *Country banking*, pp. 75–125.

[37] SA-N, 1764–72: EL-N, 1764–72.

[38] Bowen, 'Little Parliament'.

[39] The firm participated in these purchases via its affiliates: Clifford & Chevalier in Amsterdam and Clifford & Blankenhagen in London.

[40] Loans against Dutch collateral, including those against risky securities, did not normally have this feature.

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TABLE 3 *Obligatie* borrower demographics

	1766–9				1770–3			
	Total volume	**Market share**	**Loan Rate (weighted average)**	**Spread to syndicate (bps)**	**Total volume**	**Market share**	**Loan rate (weighted average)**	**Spread to syndicate (bps)**
Seppenwolde syndicate	1 220 050	10%	3.66%		6 142 300	53%	3.71%	
Hope & Co.	4 197 000	35%	3.62%	−4	684 500	6%	3.38%	−33
Gerrit Blaauw	495 400	4%	3.53%	−13	368 000	3%	3.47%	−24
Others	5 963 844	50%	3.62%	−4	4 123 337	38%	3.59%	−12
Total	11 876 294				11 318 137			

Amounts in current guilders.
Source: SA-N, Daniel van den Brink notary, 1766–73.
Number of observations: 795.
'Others' comprise 55 and 59 names in each period, respectively.

share among borrowers from mainstream firms such as Hope and Gerritt Blaauw to the speculators of the Seppenwolde syndicate and their backers at Clifford, who eventually accounted for more than half of this market (table 3). The syndicate's position initially prospered as the London crisis broke out: Alexander Fordyce had in fact bet that EIC stock would maintain its post-1769 downward trend by 'shorting' it,[41] but was cornered by the leveraged long position of the syndicate along with that of Sir George Colebrooke, chairman of the EIC and allegedly an insider trader.[42] The victory was transient, however, and the stock soon resumed its downward trend, accelerated by the rupture in the credit relationship between the EIC and the BOE at the end of that summer.[43] Between its high just after the failure of Fordyce in June and that of Clifford at the end of December 1772, the stock dropped by about 27 per cent,[44] breaching *obligatie* barriers and triggering margin calls.[45] Clifford's bigger counterparties started to pull away in October and the bank's AWB account fell below 100 000 guilders,[46] forcing it to seek out new creditors in response. On 15 December, the Dreyers in London requested the return of 171 000 guilders via bills which were duly protested by Clifford.[47] On the first trading day after the 3-day Christmas market holiday (28 December), protests grew 10-fold as Clifford finally failed, leading to the Amsterdam payments structure seizing up over the new year.[48]

[41] Part of Fordyce's sales were effected via a margin agreement with Hope, cash settled monthly (SA-L 735/1.2.3.5 1510, fo. 14).

[42] For insider trading allegations against Colebrooke, see *London Evening Post*, 19–22 September and 22–4 September 1772, BM Add 38208, fos. 176–7, William James to Charles Jenkinson, 14 September 1775. The syndicate's position peaked at 6.3% of the EIC's market capitalization.

[43] BOE G4/21, fos 286–7. Kosmetatos, *1772–3 credit crisis*, p. 199.

[44] Neal, *Course of the Exchange* (dataset).

[45] Koudijs and Voth, 'Leverage and beliefs', p. 3373. Examples of 10% margin calls on the Seppenwolde syndicate around the immediate period of the Amsterdam outbreak can be found in SA-N., Daniel van der Brink, 31 December 1772 (10602/1726), 2 January 1773 (10603/23), 4 January 1773 (10603/35 and 10604/596), and 26 February 1773 (10604/592 and /596).

[46] SA-L, 2H 1772, p. 661.

[47] SA-N, Jeronimus Nolthenius, 22 December 1772.

[48] SA-N, 5075.

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II | Credit expansion and risk profile deterioration of Dutch assets prior to 1772

The fall in EIC stock was not unprecedented. The 1769 bubble implosion was comparable in magnitude, and *obligatie* margin loans had been equally present in the Dutch money markets then.[49] This begs the question of why the 1772 shock triggered a major financial crisis that had not materialized 3 years earlier. The answer may lie not in the magnitude of the shock, but rather in that it took place in a market that was already in some distress and that involved one of its central players. In London, the failure of a well-connected speculator shook a fragile money market that was overly dependent on financial engineering and leveraged liability structures.[50] In Amsterdam, the margin demands on the *obligatie*-exposed members of the Seppenwolde syndicate came after a decade of increasingly misallocated risk, and on top of accumulated losses in the plantation sector after 1770.[51] The backing of the syndicate by Clifford sustained this misallocation by less-informed investors who trusted the bank's reputation, whilst the pivotal position of the firm in the Amsterdam financial markets created a systemic threat when it failed.

The decade preceding the crisis followed a familiar pattern of peacetime credit and asset cycles: (a) a period of high liquidity and good returns on low-risk assets, enhanced by plentiful credit and the availability of marketable securities;[52] (b) a shift towards marginal and less liquid assets as prices rise and returns become harder to generate;[53] (c) an increased dependence on assets generated by financial engineering (e.g. securitization) that investors consider 'safe',[54] but whose risk they are unable to fully monitor and evaluate;[55] (d) the willingness of major financial intermediaries to sustain credit demand, in the expectation that negative performance by lenders will not be singled out in a subsequent broad market correction;[56] and (e) a correction when reasonable margins are extinguished by high prices, external inflows dry up, or a negative shock impacts a major financial intermediary.

The end of the Seven Years War reduced the established investment opportunities for the Dutch, since supplying the British military was no longer necessary and the British public debt stopped growing.[57] The large capital gains made on British securities holdings after the signing of the Peace of Paris further increased the capital available for reinvestment, but reduced the margin of future returns. Between 1764 and 1772 the aggregate Dutch investment balance sheet remained about the size it had been at the end of the war, but the net investment mix shifted towards riskier and less liquid securities, backed by lower AWB balances (table 4). Outstanding loans to foreign sovereigns (excluding British consols) more than doubled, whilst the volume of outstanding *negotiaties* rose 10-fold. The abundance of capital in the latter sector was reflected on real assets: land prices on

[49] From 270–5 in May 1769 to 200–5 in January 1770, also a fall of about 27% (Neal, *Course of the Exchange*).

[50] Kosmetatos, *1772–3 credit crisis*, pp. 171–3.

[51] BOE bill discounts show also a peak in 1770, reflecting an increased provision of liquidity to a tentative British credit market, though the cause there may have been the fear of renewed European war (Kosmetatos, *1772–3 credit crisis*, p. 183).

[52] Quinn and Turner, *Boom and bust*, pp. 4–11.

[53] Minsky, 'Financial instability hypothesis', Kindleberger, *Manias*, p. 18, Greenwood and Hanson, 'Issuer quality'.

[54] Gennaioli and Shleifer, *A crisis of beliefs*, pp. 79–106; Dang et al., 'Information view of financial crises'.

[55] Diamond, 'Financial intermediation'; Hartman-Glaser et al., 'Optimal securitisation'; Keys et al., 'Did securitisation lead to lax screening?'; Povel et al., 'Booms, busts and fraud'.

[56] Rajan, 'Why bank credit policies fluctuate'.

[57] Mitchell and Dean, *Abstract*, pp. 390–1.

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TABLE 4 Dutch national investment mix, 1764–72

		1764	1772	Change
Most liquid	AWB deposits[a]	31 000 000	16 000 000	−27%
	Bill credit (liquid, marketable)[b]	80 000 000	65 000 000	
Less liquid	Dutch government bonds [c]	350 000 000	327 000 000	−11%
	British consols and other fixed income securities[d]	225 000 000	205 000 000	
	Equity (Dutch and British)[e]	88 000 000	61 000 000	
Illiquid	Short term (West Indies bills, *obligaties*)[f]	10 000 000	30 000 000	275%
	Long term (sovereign foreign loans)[g]	18 000 000	45 000 000	
	Long term (*Negotiaties*)[h]	4 000 000	45 000 000	
Totals		806 000 000	794 000 000	
	Fraction of illiquid investments	4%	15%	

Amounts rounded to the nearest million current guilders.

Sources: Author calculations based on SA-N, various notaries, 1764–73, and previous literature estimates.

[a]van Dillen, *Geschedenis*, pp. 783–6.

[b]Assumes overall bill market constant at 90 million, but with a shift towards West Indies bills between dates.

[c]Riley, *International government finance*, p. 77.

[d]Riley, *International government finance*, p. 123.

[e]Wilson, *Anglo-Dutch commerce*, p.181; Bowen, 'Investment and empire', p. 201.

[f]Assumes 10 and 25 million in West Indies bills respectively (see [b] above).

[g]Riley, *International government finance*, p. 84.

[h]van der Voort, *Westindische Plantages*, p. 110; De Jong et al., 'Plantation mortgage-backed securities', p. 886.

the Danish West Indies island of St. Croix, a major focus of interest for Dutch speculators, rose from 11.8 rigsdalers per acre in the 1750s to as much as 196 in the 1780s,[58] whilst sugar production grew sixteen-fold.[59] Land appreciation occurred in other parts of the West Indies as well,[60] but valuations in the less-profitable Danish West Indies plantations caused particular unease among contemporaries for exceeding even those for prime land in Jamaica.[61]

The implosion of the EIC bubble in 1769 and concurrent retreat of the *negotiaties* were cushioned by accumulated profits and the willingness for a time of creditors to continue providing additional capital to sustain the market. This latter trend is reflected in the increased percentage of bills of exchange that were paid under protest (figure 1). This was a Dutch variation of the usual bill acceptance protocol. If an otherwise willing acceptor did not have the cash to honour it, the bill could be protested with a notary in the hope that another party might step in. This could be a firm with whom the drawer regularly did business, or with whom there were personal or familial ties. The rate at which parties stepped into transactions was pro-cyclical, indicating investors with both funds and risk appetite in good times, and conversely a rise in risk aversion under weakening credit conditions. During this particular expansion, a protested bill had between 20 per cent and 30 per cent chance of another party stepping in, with European drawers having a significantly higher chance of enjoying this source of ancillary liquidity than West-Indies-based ones. Protested bills with multiple endorsers had an even higher chance (up to 60 per cent), as the credit risk was

[58] Dookhan, *History of the Virgin Islands*, p. 80

[59] Westergaard, *Danish West Indies*, p. 255

[60] Burnard, 'Prodigious riches'.

[61] *Gedenkzuil*, pp. 77–85; Hancock, *Citizens of the world*, p. 148.

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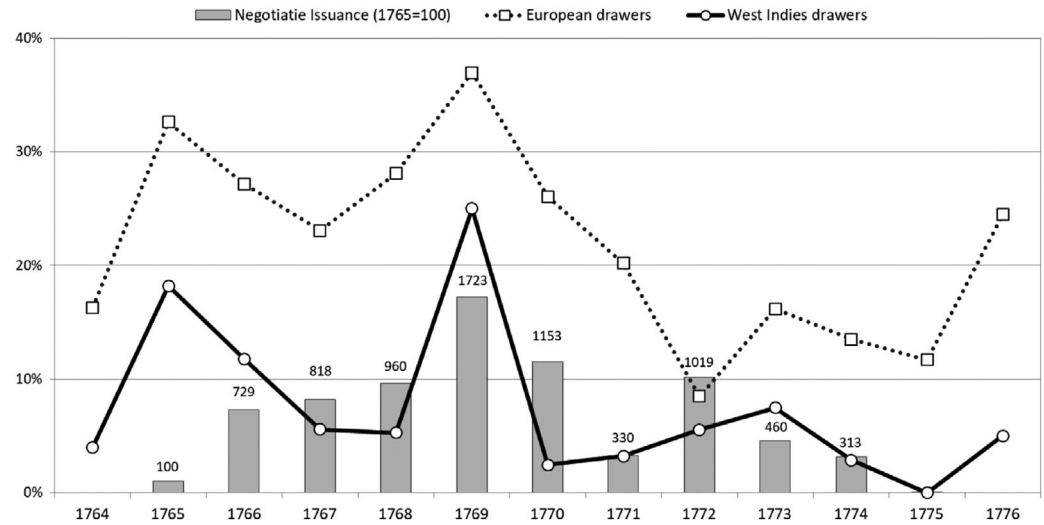

FIGURE 1 Payment under protest rate for bills on Amsterdam and *negotiatie* issuance, 1764–76. *Sources*: Bills, author calculations based on SA-N 5057/1764-1776. *Negotiaties*, Van der Voort, *Westindische Plantages*, Table 11, p. 102.
Number of bills observations: 1725.

perceived to be lower.[62] This allowed well-connected firms facing cashflow shortages to continue accessing the money market. A notable example is that of the Grill companies of Sweden, who in 1769 saw many of their bills paid under protest 'to the honour' of important endorsers,[63] especially by the firm of Horneca Hogguer, who was active in the Swedish trade and thus motivated to support a prominent Swedish associate.[64]

The payment under protest rate peaked in 1769 before gradually falling below 10 per cent. The fall was more dramatic for West Indies bills, which were generally perceived to be riskier than European ones, due to the longer tenors reflecting the intervals inherent in the transatlantic trade. If, however, instead of a randomized sample, we use one that over-represents large wholesale firms (figure 2), the rate appears to have persisted at above 25 per cent down to 1772, reflecting the persistence of large financial firms to sustain this market with additional credit even after it went into retreat.

Over-lending to the West Indies during the boom linked several of the key participants in the Seppenwolde syndicate. Ter Borch, who as we saw above was also active in the Anglo-Dutch accommodation bills market, was a leading issuer of mortgage-backed securities in the speculative Danish West Indies sector. Between 1767 and 1769, the firm brought 6.6 million guilders to the market, with a further 2 million in 1769–72. From 1769 onwards ter Borch had an overhang of unsold

[62] As long as credit markets remained uncorrelated (i.e. outside crisis periods), the serial and joint unlimited liability of bills signatories meant that more endorsers provided multiple routes for creditors to appeal for their money, and hence a potentially lower credit risk. During crisis periods such as in the summer of 1772, however, markets correlated and serial and joint liability instead turned into an avenue of contagion (Kosmetatos, 'Last resort lending').

[63] Our randomized sample includes three bills drawn by Grill and paid under protest, totalling 2650 guilders projecting to a total of more than 150 000. SA-N, August–September 1769, Thierry de Marolles, Cornelis van Homrigh notaries.

[64] Braudel, *Civilisation and capitalism*, p. 271.

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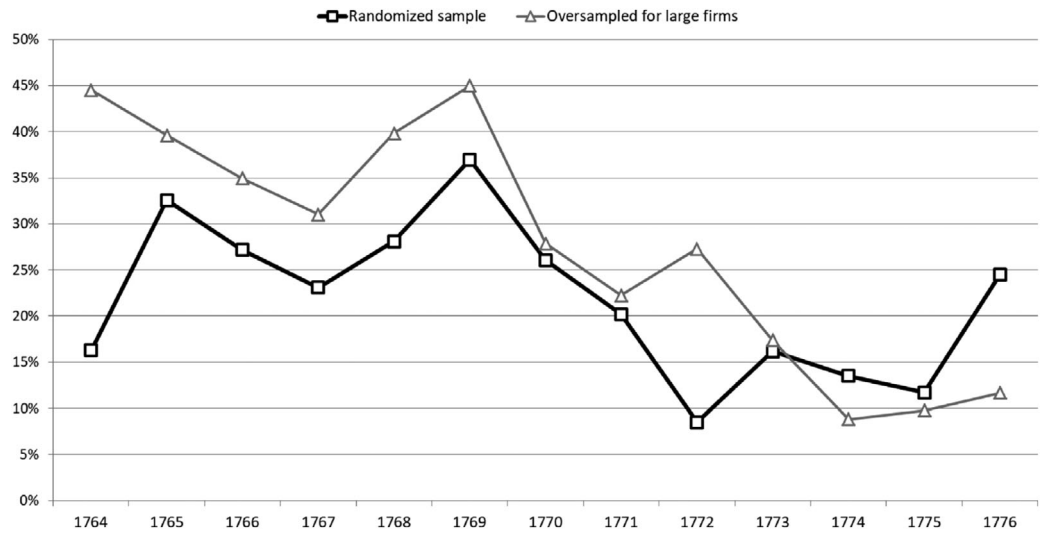

FIGURE 2 Payment under protest rate for bills on Amsterdam (all drawers) according to sampling method, 1764–76. *Sources*: Bills, author calculations based on SA-N 5057/1764-1776. *Negotiaties*, Van der Voort, Westindische Plantages, Table 11, p. 102.
Number of observations: 1725 (randomized sample), 476 (oversampled for large firms).

securities that were showing signs of credit deterioration, as evidenced by the growing volume of requests for new working capital from planters,[65] and the fact that bill protests on St. Croix grew threefold in 1769–71.[66] Notarial documents show that the Seppenwoldes became involved with ter Borch's ventures from an early date. In March 1767 they had signed commitments to distribute the unsold portion of a 500 000 guilder tranche of ter Borch *negotiaties*,[67] were borrowing against ter Borch securities from August 1767,[68] and used loan brokers to re-finance some of these positions for 20 000–40 000 guilders annually from 1770.[69] The actual positions held (or accessible via ter Borch) were probably larger, as indicated by notarial documents offering to sell or to pledge blocks of 300 000–500 000 guilders.[70] Both the Seppenwoldes and ter Borch also accepted bills on behalf of the planters to whom the *negotiatie* loans had been granted, further extending their exposure to this sector.

By 1771, bills connected with the Danish West Indies accounted for 75 per cent of London bills protested in Amsterdam, and ter Borch and his associates accounted for the vast majority of them. By that time the market was already in retreat: *negotiaties* issuance fell dramatically, and there was a spike in bill protests of about a million guilders in the second half of 1770, followed by about 150 000–250 000 guilders in protests every quarter until the 1772 crisis broke out.[71] Though

[65] SA-N, 1768–70. Protested West Indies bill values more than doubled in 1770 and 1771 over the previous year.

[66] SA-N, queried on: https://archief.amsterdam/indexen/.

[67] EL, Isac Elias Luzac, notary, 24 March 1770

[68] EL, Hendrik Isaac Kreet, notary, 5 October 1767

[69] SA-N Johannes Beukelaar, 14 May 1770, Kreet, 15 February 1770.

[70] EL, Isac Elias Luzac notary, 24 March 1770.

[71] De Jong et al., 'Plantation mortgage-backed securities', pp. 892–4.

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far enough in the past to rule them out as a possible contagion vector for the 1772 events, these protested bills burdened the West Indies sector by imposing losses on planters, since a 25 per cent fine on the bill principal was charged on protest. On top of the reputational damage to the planters' credit, this additional encumbrance on plantation capital made the ongoing funding of an already uncompetitive sector more difficult at a time of falling commodity prices.[72] When news of a major hurricane hitting the Danish West Indies reached the Netherlands in September 1772,[73] auction prices for ter Borch securities fell to around 80 per cent of face value, that is, below the 90 per cent advance rates used to borrow on them. This sudden blow may have incentivized the syndicate's tenacious stance over their deteriorating position in *obligatie*-funded EIC shares. Their unrealized losses in the West Indies were already large, whilst liquidity was drying up, as shown by the falling rate of bill payment under protest. Their EIC speculation may have been their last hope for escaping their predicament.

III | Gatekeeping arrangements and the enabling of speculators

THE notarial and legal history of the Seppenwolde brothers underlines the failure of Dutch lenders to heed red flags for speculators. The Amsterdam bills market suffered from a major free-rider problem in comparison with London, where access to the BOE discount window was the ultimate arbiter for how long and in what volumes marginal bills or overleveraged structures such as swivelling could be sustained: the very rumour that the BOE was 'throwing out' the bill of a prominent market player such as Fordyce or Colebrooke was market-impacting.[74] In Amsterdam, the secrecy of the AWB over the state of its customers' balances meant that there was a higher likelihood of bills getting accepted with less scrutiny.[75] Long distance bills could travel through several hands via endorsements before they reached an acceptance house, and endorsements could continue before confirmation of acceptance (or protest) arrived back from Amsterdam. Some bills were purposely designed to deceive, with larger denominations broken into uneven amounts to make it seem that they were based on conventional merchandise transaction (in other terms, to be 'real' bills). All this meant that known speculators such as the Seppenwoldes could finance their positions at only modest credit premia. Between June and December 1772 the syndicate borrowed 3.25 million guilders in 796 EIC-backed *obligaties*:[76] 88 per cent of these were priced between 3.5 per cent and 4 per cent, which was broadly the same level that the best credits in the market (e.g. Hope) were getting for such secured lending (refer back to table 3), even though the value of the collateral was weakening and the Seppenwoldes had a track record for being litigious and slow to pay.[77] The Seppenwoldes were alleged to have misled counterparties about securities they claimed to possess, and had been involved in two lawsuits that were ultimately taken to the nation's highest court over the pledging of securities as collateral.[78]

[72] de Vries and van der Woude, *First modern economy*, pp. 472–4.

[73] Alexander Hamilton to *The Royal Danish American Gazette*, 6 September 1772.

[74] Kosmetatos, *1772–3 credit crisis*, pp. 216, 227.

[75] Quinn and Roberts, *History of the Bank of Amsterdam*, p. 196.

[76] SA-N, Daniel van den Brink notary, 8 June–30 December 1772. This was split between both Seppenwolde brothers (around 2.25 million) and the Clifford partnership of Clifford & Chevalier (around 1 million).

[77] SA-N, Thierry Daniel de Marolles notary, 10 April 1770, EL, Johannes Thijssen notary, File Number 75, 12 May 1770.

[78] *Nieuwe Nederlandsche jaerboeken* (1766), pp. 1152–69, SA-N 5057/12400/ 68040, 19 November 1771.

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TABLE 5 Amsterdam money market segmentation according to AWB account balances, and impact of the 1773 crisis on it

		As of 31 July 1772			Change to July 1773		
		Number	Total balances	Average balance	Balances	Bills volume	Withdrawing
Financial elite	Hope & Co	1	1 201 858		2%	−37%	
	Clifford & sons	1	465 990		−97%	−99%	Failed
	Firms with balances >100 000	13	2 834 757	218 058	−49%	−30%	7%
Institutional	VoC chambers, WIC, society of Surinam	9	1 385 475	153 942	−51%	−49%	67%
	Other state and charity accounts	18	215 198	11 955	−27%	188%	
Rentier	High net worth rentiers	9	1 479 061	164 340	23%	−53%	20%
	Widows and unmarried women	204	725 273	3555	35%	−14%	53%
Mid-size	Balances between 5000 and 100 000	405	7 506 182	18 534	−1%	−31%	28%
Small-size	Balances below 5000	1083	1 023 628	945	336%	−11%	46%
Jewish	All firms and individuals	389	883 510	2271	8%	−62%	48%
Low-use	Low volume and non-transactors	297	40 262	136			45%
	TOTAL	2429	17 761 194		3%	−40%	

Amounts in AWB florins.

Sources: Author calculations based on SA-N, SA-L (see app. B for methodology). 'Withdrawing' indicates fraction of firms in each segment reducing bills business in the AWB by 80% or more, and does not necessarily imply bankruptcy or any other sort of going out of business.

There were several reasons behind this indulgence. Firstly, the Dutch market was not monolithic: its participants varied greatly in terms of sophistication and access to information. Secondly, the specialization of these participants in their particular businesses or socio-economic milieus prevented them from evaluating risk for parts of the market in which they did not normally operate. Finally, there was confidence in the capital reserves and credit connections of the oldest and largest firms such as Clifford, who would normally cushion volatility by stepping in with spare cash to support each other and the broader market through acceptances and payments under protest, and even by absorbing losses when necessary. To illustrate these points we segment the Dutch money market according to the main business lines of its participants as reflected in the size and type of position they tended to hold in the AWB (table 5). Clifford was at the pinnacle of this hierarchy, second only to Hope for the size and universality of their business, underlining their systemic function. Two other demographics were prominent in providing the capital for the Seppenwolde speculations, and increasingly for the funding needs of Clifford themselves: rentiers and specialist Jewish firms. Clifford's account activity in the 4 months preceding its failure shows a noticeable shift in the firm's funding structure away from the larger merchant firms and towards smaller, predominantly Jewish, names, many active in the precious metal trade (figure 3). The only establishment firm to keep providing cash to Clifford in these final months was Muilman,

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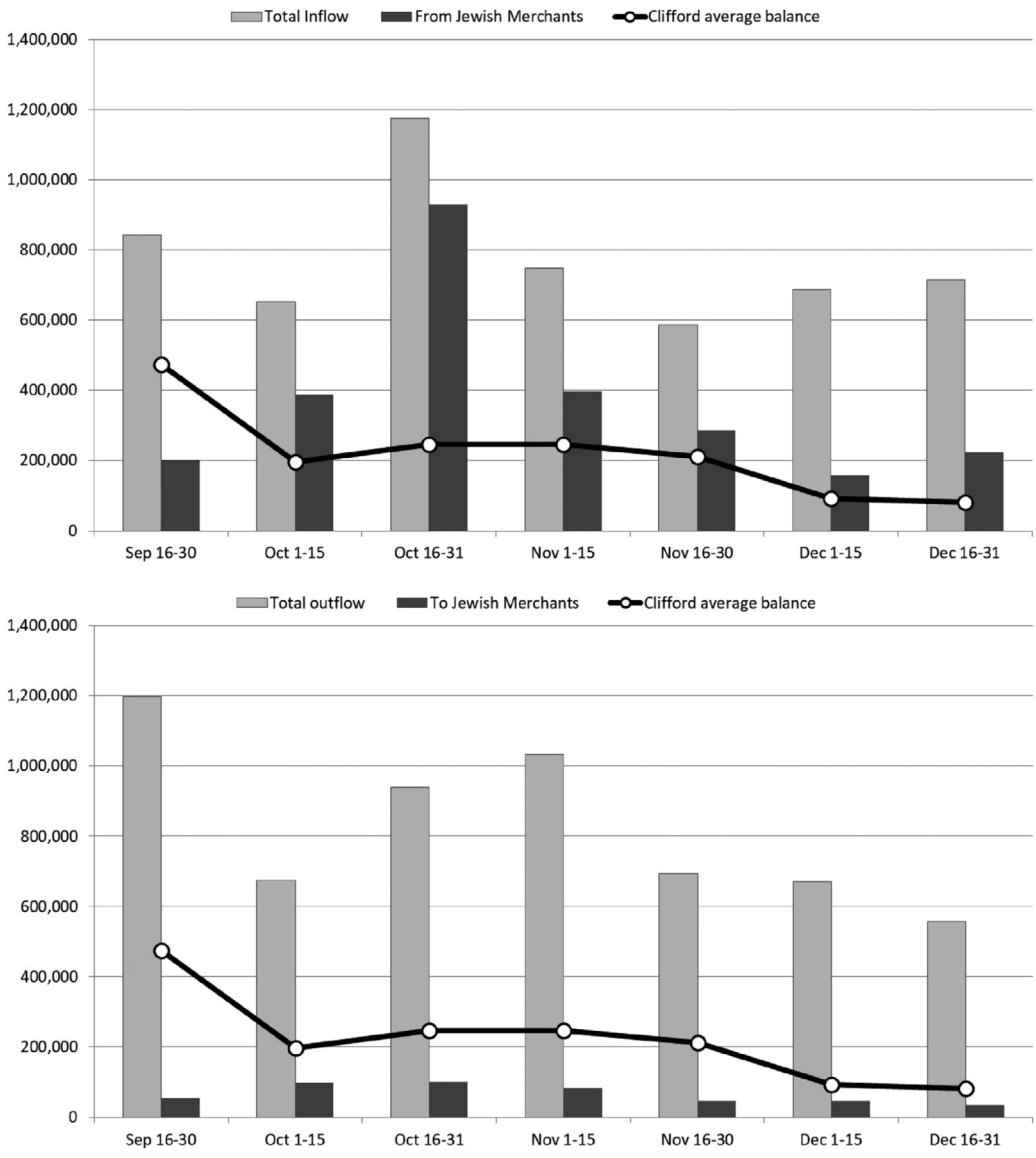

FIGURE 3 Clifford AWB credits (top) and debits (bottom) with average AWB balance, Q4 1772. Amounts in florins. *Sources*: SA-L, 5077, Ledgers: 50–685 and Resisters of Balances by Client 993–1273, Ledgers 492–4.

and as is attested in a subsequent 15-year lawsuit against the Seppenwoldes, they only did so out of a belief that these loans had been securely collateralized.[79] Cash investment by Jewish firms was related to a large inflow of Spanish silver coin earlier in the year: of the 5.2 million florins that flowed into the AWB in the spring and summer of 1772, 830 000 were deposited by Clifford and borrowed from Jewish specie dealers via bills of exchange.[80] Given contemporaneous (though

[79] Memorie.

[80] SA-L 5077/263.

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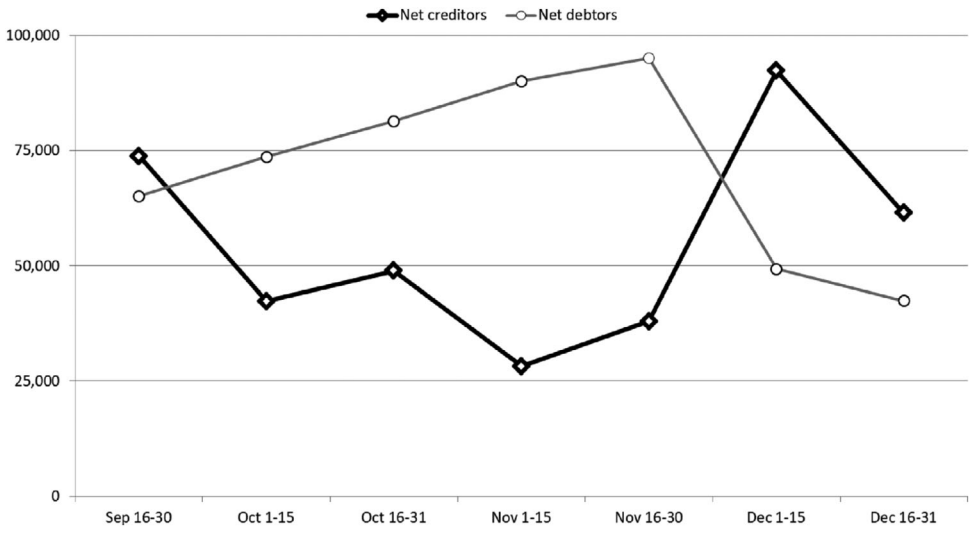

FIGURE 4 Average AWB balance of Clifford counterparties, Q4 1772. Amounts in florins. *Sources*: SA-L, 5077, Ledgers: 50–685 and Resisters of Balances by Client 993–1273, Ledgers 492–4.

smaller) investments by these same Jewish firms in Hope, it appears that investments in the top firms of the Dutch market hierarchy were being sought for these newly created balances, and that an elite firm such as Clifford was still deemed as a desirable debtor.[81] The shift of Clifford's funding away from the merchant elite that had hitherto been their support, and towards names with lower average AWB balances (figure 4), shows that some degree of credit unravelling was taking place in the last weeks of the bank's existence.[82] These new creditors stepped in at a faster pace starting in late September through the end of October, helping Clifford pay out 3.4 million florins to previous creditors and to raise a further 400 000 florins, 250 000 of which were forwarded to syndicate partners for meeting *obligatie* margin calls. The large volume of *obligaties* supporting the EIC speculation, however, meant that unsecured bill holders (including these new Jewish creditors of Clifford) were subordinate to lenders who had senior cash claims via margin calls on the secured *obligatie* loans. *Obligatie* borrowing was also longer dated than bills (6–12 months versus 3 months, respectively) and with renewal dates more evenly spaced out to accommodate the renewal of maturing loans. The sudden rush to draw more bills in September and October by Clifford's creditors meant that the firm faced a financing cliff in the end of December as the typical 90-day bills drawn when these new creditors came were falling due. Clifford's AWB balances fell below 100 000 florins in early December, just as margin calls were coming in with EIC shares breached the *obligaties*' stipulated barriers.

Neither rentiers nor Jewish firms were 'dumb money', but they were also not privy to critical information that could be incorporated into risk premia. Private firms did not disclose financial information under normal circumstances, even to their main lenders. The worsening credit situation would have been evident to bills specialists such as Hope, since they could literally see for

[81] A change on the top of the firm's management (Jan Clifford died in September 1772) apparently had no impact on perceptions of its solidity.

[82] Unravelling is more usually associated with equity markets under unlimited liability. See Acheson and Turner, 'Death blow to unlimited liability', pp. 237–8.

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themselves through the bills they handled daily which names were accepted or endorsed and by whom. The market at large instead had to rely on heuristics such as reputation, which tended to benefit members of an establishment inner circle such as Clifford, and incentivized speculators such as the Seppenwoldes to act as free-riders and run up leveraged positions. The assumption remained from the days when bill credit was rooted in long-term mercantile relationships that 'honour' might be sufficient to police defaulters and ne'er-do-wells on the assumption that they would be afterwards shunned. The notarial protest system was partly built on this need for public information on financially weak or irresponsible counterparties. The 1763 crisis had nevertheless already demonstrated that for all that, the potential for rapid loss of liquidity and chain failures remained, especially when an over-leveraged firm with poor risk management played a major role in the bills market.[83] In 1772–3 these problems reappeared, and this time they involved a systemically important player.

These challenges were not unique to Amsterdam. Lack of transparency during booms enabled speculators everywhere, whilst during a downturn it amplified risk aversion, leading to credit crunches, as indeed happened in London in 1772.[84] However, London possessed a gatekeeper in the BOE's discount window that was absent in Amsterdam. Not only was the Bank the ultimate arbiter of credit quality by accepting or refusing to discount bills of exchange, but by these actions it also signalled the wider market: any concern that might arise over a party's solvency would be promptly dispelled if their bills continued to be discounted at the Bank, or continued to be accepted by someone with known BOE discount access. The system was not foolproof, since after all the British bills network did get into trouble in 1772, but it was centralized, well-resourced and displayed impressive responsiveness in the face of market failure. The closest to a gatekeeper in the Dutch system was the AWB, but though centrally placed in the flow of payments, it remained above all a clearing house for private transactions. Beyond it, credit guardrails were few and out of date, whilst crisis containment depended on the willingness of a multi-member 'club' of insider firms to shoulder the burden. The absence of the equivalent of the BOE's developing LOLR role was to prove a critical weakness in the long term.

IV | Contrasts in crisis containment: the Amsterdam 'club' of insider firms versus centralised last resort lending in London

Though the tools employed were different, there were similarities in the rapidity and effectiveness of the corresponding British and Dutch containment actions in 1772–3. The British approach was centred on the BOE acting as the backstop of the disrupted money markets, and was accordingly dependent on the decisions of the directors of a chartered company with intimate ties to the British fiscal–military state. In turn, the BOE relied on its bullion reserves and its widely trusted paper money to support the bills market in a prompt action that aimed to stop the spread of financial distress close to its source. Once the immediate danger of contagion was averted, strict bankruptcy laws and the unlimited liability of partners of bankrupt firms were relied upon for the unwinding of assets and payments of dividends to creditors.[85] The Dutch also utilized a centrally placed agent, though only for the transmission and clearance of funds. In that aspect, the system

[83] Gebroeders de Neufville, the central actors of the 1763 events (Quinn and Roberds, 'Responding to a shadow banking crisis').

[84] Kosmetatos, 'Last resort lending'.

[85] Kosmetatos, *1772–3 credit crisis*, pp. 271–87.

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worked extremely well: the AWB's ledger transfer system was as rapid as the BOE's paper issuance, and was supported by the large amounts of specie circulating in the Amsterdam market orbit. The ultimate sourcing of rescue funds and the cushion to absorb losses otherwise relied on the cohesion and coordination of the club of privileged insiders who were meant to step up their bills acceptances and make financial sacrifices in the common interest. The resolution of afflicted firms also tended to be more consensual than in Britain, with some continuing to trade under supervision.

The civic–mercantile elite of Amsterdam indeed showed considerable creativity and resolve in slowing the spread of financial distress in 1773. Some of the methods employed, such as the creation of a fund for loans on warehoused commodities, built on ideas originally floated in 1763.[86] Others, such as taking advantage of the fact that the crisis occurred over the Christmas–New Year holiday by having an extended closure of the AWB until 29 January, were novel and prescient of the actions taken by stock exchanges and central banks in August 1914.[87] The city's role in the precious metals trade allowed credit built up with dealers of coin in other cities to be tapped within days. Contemporary accounts relate that correspondents, such as the Sweden specialists Horneca Hogguer, arranged for coin to be rushed by coach from Paris for deposit at the AWB, and that the BOE stayed open on Sunday to facilitate London merchants gathering coin for dispatch on the next available departure for Amsterdam.[88] From the records of the AWB coin room, we see some of these accounts corroborated. On the first day of the AWB re-opening, 258 275 florins were created through new coin deposits, with agents for the Swedish and Danish governments being among the depositors, lending some credence to the Horneca story. Furthermore, there is no obvious record of the rumoured deposit by the Vannecks of £500 000 in coin,[89] which if true, must have been enacted through a steady flow of deposits through a number of channels over the first half of 1773. One place in the surviving record that demonstrates how this may have worked in practice is the AWB account activity of Johannes van der Hooght, the largest *cassier* in the Amsterdam market.[90] *Cassiers* were specialist merchants who made markets between AWB florins and current money.[91] Though crucial for the operation of the money markets, they tended to be smaller-sized players with AWB balances at around 10 per cent of the elite firms. Van der Hooght was the exception, with both balances and bill volume on par with the big merchant bankers.[92] As new coin arrived in the AWB in January 1773, there seems to have been a coordinated effort among major firms to ensure that van de Hooght received the lion's share, resulting in bills totalling more than 500 000 florins accepted by (among others) Muilman and Horneca. It is possible that this was some form of rescue operation,[93] but it is equally likely to be an example of the complexities of passing large volumes of coin through the Amsterdam money markets and its specialist firms under crisis conditions. If a firm such as Horneca had access to a newly arrived large amount of coin as was

[86] This administered bankrupt estates (both business and personal). Unlike Britain, a Dutch administered liquidation typically took place only after voluntary arrangements with creditors had failed (*Gedenkzuil*, pp. 95–100).

[87] Roberts, 'How we saved the City'.

[88] *Morning Chronicle*, 6 January 1773, *London Chronicle*, 23–6 January 1773, NAS GD267/3/3/1, George Home to Patrick Home, 11 January 1773.

[89] Kluit, *Amsterdamsche Beurs*, p.88

[90] SA-L 5077, Ledgers 493–7.

[91] Quinn and Roberds, *History of the Bank of Amsterdam*, pp. 37–41

[92] In 1772–3 their average balance was 139 000 florins, and their bills position exceeded 1 million. There survives no record of their coin holdings.

[93] Kluit, *Amsterdamsche Beurs*, pp. 76–8

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TABLE 6 Protested bill end-risk position (current guilders) and market share, 1772–5

		1772		1773		1774		1775		Obs.
Financial Elite	Hope & Co	631 514	10%	1 525 326	24%	381 590	10%	532 142	14%	90
	Firms with balances >100 000	336 049	5%	519 104	8%	348 986	9%	40 947	1&	45
Institutional	Includes foreign entities	34 522	1%	164 566	3%	48 034	1%	28 105	1%	8
Rentier	All categories	182 030	3%	269 913	4%	53 482	1%	5250	<1%	168
Mid-size	Balances between 5000 and 100 000	1 123 736	17%	1 245 002	20%	1 171 570	30%	1 680 908	46%	167
Small-size	Balances below 5000	3 988 439	61%	2 093 361	34%	1 815 566	46%	1 244 985	34%	499
Jewish	All firms and individuals	292 560	4%	411 232	7%	80 571	2%	141 596	4%	54

Market shares calculated from included segments only.

Sources: Author calculations based on SA-N, SA-L (see app. B for methodology). 'Withdrawing' indicates fraction of firms in each segment reducing bills business in the AWB by 80% or more, and does not necessarily imply bankruptcy or any other sort of going out of business.

rumoured in the press, then one of the quickest ways to convert it into usable current coin would have been to use the services of the largest *cassier* in the market.

Some of this new money went to cover losses. A total of 86 per cent of the coin brought into the AWB originated with firms who had done some form of bills business with Clifford in the last months of its existence.[94] Merely making up for losses, however, was not enough – newly created balances also needed to circulate. Medium-sized merchant houses such as Le Clerq & Collard and Gebroeders Lucken & Luden more than doubled the velocity at which they turned over their liquid balances, at 29 and 33 times per month, respectively. A small number of other aggressive firms achieved a ratio of account turnover to balance of more than twice that amount.[95] Liquidity also came through the creation of new partnerships aiming to profit from a disrupted bills market. During 1773, 19 firms appeared for the first time in the AWB with balances of more than 5000 guilders. Several, such as the new firm of Adrian Hope, Jan van de Poll, and Jacques Teysset, took a leading role in the clean-up of failed firms and provided merchant families the opportunity to organize new alliances. Above all, the willingness of Hope and of some region-specialist firms to continue accepting bills greatly aided in the recovery of the market.[96] Hope in particular seems to have acted as a kind of backstop to the bills market, assuming about a quarter of the end-risk position in the protested bills market in 1773 (table 6).[97] By July 1773, transaction volumes recovered as rentiers returned to the market, and even *obligaties* reappeared. In only half a year, the market had swung from intense money-hunger to high levels of liquidity.[98]

[94] *Gedenkzuil*, pp. 29–35.

[95] SA-L 5077/2.4.1, Ledgers 492, 493 and 494

[96] Horneca Hogguer and Pye Rich Wilkieson (specialists in Russia) were two prominent examples.

[97] Defined as appearing as the acceptor or the final endorsee on a bill, and hence being most likely to be called upon to pay on maturity.

[98] van Dillen, *Geschedenis der Wisselbanken*, pp. 910–1.

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Five of the firms involved in the syndicate failed in the immediate aftermath of the crisis: Clifford and their affiliate Clifford & Chevalier, and three London based firms: Clifford & Blanckenhagen (another affiliate), the Dreyers, and John Craven. The disappearance of Clifford was seen as remarkable in the British press considering the firm's antiquity and presumed systemic importance.[99] What was more remarkable, however, was that Clifford was the only immediate casualty of the first rank, at least in terms of outright failure. Although weakened and under supervision, both ter Borch and the Seppenwoldes stayed in business. Clifford's creditors accepted a composition deal in February 1773 for a recovery rate of 25 per cent, one of the biggest 'haircuts' accepted in either Amsterdam or London during this episode.[100] This simplified the process of winding down the complex finances of the syndicate, and enabled the surviving entities that still held long-term assets (especially ter Borch with their role in the *negotiaties* market) to be administered for the benefit of lenders.[101] The comparatively indulgent treatment of the Seppenwoldes contrasts with the typical bankruptcy petition filed in an English court, and is reflective of a policy on debt resolution that was more malleable than the rigid British approach. None of this should obscure the fact that significant losses were incurred and that not everyone came through unscathed. Just as was the case in Britain, some losses fell more heavily (and permanently) on outsiders who had never expected to lose money.[102]

In the medium term, there was a profound change in the Amsterdam wholesale markets. Of the four largest merchant–financiers by AWB balances in 1772, one failed (Clifford), one was damaged through exposures to the syndicate (Muilman), and a third voluntarily wound down its business despite a still-strong commercial network (Pels). The disappearance of the latter was partly due to a generational change amongst its senior partners, but changes of this kind had been relatively common in the past.[103] The loss of Pels' name and credit network undermined Amsterdam's competitive edge in France, Spain, and Russia, whilst the city's overall financial strength was damaged by Clifford's failure and the heavy damage to the Jewish bullion traders after the firm's late funding shift. Rates of Jewish firms closing their AWB accounts more than doubled year-on-year, and almost half the remaining Jewish accounts in the AWB reduced their bill volume by more than 80 per cent in 1773 (refer to table 5). Jewish names remained prominent in the *Desolate Boedelskamer* for several years after.[104] For some Sephardic families such as the Ricardos and Cardozos, it would be the English or American branch that would rise in prominence in the following decades, contributing to the diminution in both cultural and economic vitality for the Amsterdam-based Sephardic community.[105]

New firms would rise in place of those that had vanished, just as they had in Britain,[106] but they would not be backed to the same extent by the great hereditary fortunes of the city, or by its

[99] *General Evening Post*, 2–5 January 1773, *St James' Chronicle*, 7–9 January 1773.

[100] Kosmetatos, *1772–3 credit crisis*, p. 211.

[101] An example of the process survives in the 1773–5 correspondence between the assignees to the estate of the bankrupt Dreyers in London and Pye Rich Wilkieson, who were handling some aspects of ter Borch's affairs (BGA 392/135).

[102] *Memorie*, p. 10; Kluit, *Amsterdamsche Beurs*, pp. 79–83.

[103] The Bicker family had married into the Pels family, taking over the management of the business (Elias, *Vroedschap*, pp. 1062–106).

[104] SA-D 5072/1.2.4/145.

[105] Bloom, Economic activities of the Jews in Amsterdam, p. 201.

[106] Kosmetatos, *1772–3 credit crisis*, pp. 277–8.

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business–political elite. Amsterdam still possessed a sophisticated money market offering payment clearance centralization, solid bank money, and a credit infrastructure that could quickly attract liquidity from the city's financial orbit. This resilience, however, rested on the ability and willingness of its mercantile–financial elite to absorb the costs of major credit externalities, and 1773 had shown that this was becoming harder to sustain: the costs of free-riders, providing liquidity to the system, stepping into chains of protested and dishonoured bills, and bearing the costs of emergency rescues appeared to be growing at a time when the commercial business of the Dutch Republic was in decline. The disastrous Fourth Anglo–Dutch War and the political strife in the Republic in the 1780s make it impossible to determine whether the Dutch system could have by its own powers restored itself to the position it had enjoyed before 1763, as they further undermined the crisis response capabilities of a city whose elite operated on an increasingly fractious national and international stage. The last remaining great house, Hope, would continue to produce profits of between 600 000 and 900 000 guilders per year, but the firm would henceforth stress its role as a commodities and commissioning merchant and bond underwriter rather than as a bank.[107] In the political chaos of the 1780s and 1790s, the Hopes would ultimately decamp to London for a time as well.[108]

In Britain by contrast, the 1772 crisis did not prevent the financial system from continuing to grow and innovate, despite the substantial short-term pain it had caused. Even in the worst affected part of the country, Scotland, the loss of the Ayr Bank was made up in very short order by the institution of a branch network by the Bank of Scotland, and by the recapitalization of both of the country's chartered banks.[109] This success was partly due to the centralization of the crisis' effects on the BOE, both in terms of its LOLR operations but also for its absorbing of a large part of the immediate costs. During the June 1772 outbreak, the BOE provided, in only a few days, some £650 000 (equivalent to about 7 million guilders) of emergency lending to the market in the form of discounts and direct rescue loans. These resulted in losses of £93 000 (around 1 million guilders) in defaulted bills and unrecoverable collateral alone,[110] but the BOE had deep pockets and could make these losses back from other business. Its overall profitability for 1772–3 was in fact little impacted.

This was not an approach that could be replicated in the long term by the specialist firms forming the Amsterdam 'club'. They lacked the BOE's scale, and more importantly, its political weight. More than a gatekeeper, more even than a LOLR, the BOE was a 'great engine of state [whose] stability was equal to that of the British government'.[111] It was not invulnerable, and there is no doubt that had it ever got into true financial difficulties, the result would have been devastating for the British money market and the country as a whole. But it could not get into such trouble, at least not of the sort that Clifford got into. This was not because the BOE's directors were necessarily more capable (or luckier) than their Dutch counterparts, but rather that the Bank was in an altogether different business than them, one that was above all concerned with (and made its profits from) the financing of the British fiscal–military state. Its true risk exposure accordingly was that of the failure of this state, a prospect that became a threat only momentarily in 1746 with the apparent ascendancy of the Jacobite rebels, whose victory would have resulted in

[107] SA-H 31209/756.

[108] Buist, *At Spes Non Fracta*, p. 155.

[109] Checkland, *Scottish Banking*, pp. 105–6, Saville, *Bank of Scotland*, pp. 146–8.

[110] Kosmetatos, *1772–3 credit crisis*, p 193.

[111] Smith, *Wealth of nations*, p. 320. The quote has been rearranged for stylistic purposes.

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a radical overturning of the 1688–1721 political arrangement that had provided the Bank with its lucrative monopoly privileges. In every occasion the state was there to provide its protection,[112] ranging from physical security and civil disorder[113] to even changing the law to the Bank's advantage, as happened with the Bank Restriction Act in 1797. The decline of Amsterdam and the rise of London after 1763 is therefore not just an outcome of the contrasting financial architectures of the two cities. The fact that London possessed in the BOE a central gatekeeper that could help ration credit, clamp down on excessive risk taking, and provide tail-risk insurance was important, and ultimately London's arrangements created a model for wholesale markets that nearly all countries would eventually follow. Equally important, however, was the fact that all these capacities were housed under the same roof in an institution that was in a symbiotic relationship with a strongly centralizing state. The Bank may have been the 'Guardian of Public Credit' which ensured the success of the British state's policies, but the state in turn ensured that this guardian was adequately guarded. There was nothing approaching such a relationship in the decentralized Dutch political–financial system, which instead had to rely on a concert of private financial firms without the reassurance of the backing of a powerful state. After the shocks of 1773 and the post-1780 political unravelling of the Dutch Republic, this concert would never be rebuilt.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request. The replication package consists of five spreadsheets already provided. Each will have sources marked inside it.

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[112] O' Brien and Palma, 'Not an ordinary bank'.

[113] Murphy, *Virtuous bankers*, pp. 171–96.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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